Telcordia Technologies

Performance from Experience

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

RE: **Ex Parte**
     CC Docket 95-155; NSD-L-00-249

Dear Ms. Salas:

On March 2, 2001, at the request of the FCC, Mike Wade and Anil Patel representing Database Service Management Inc. (DSMI); Ben Schneider, Bill McClew and the undersigned representing Telcordia Technologies; and Ron Pollard representing SBC met with Yog Varma, Diane Griffin Harmon, Les Selzer and Marty Schwimmer from the FCC's Common Carrier Bureau to discuss the above mentioned proceeding.   Attached is a copy of the presentation used during the meeting.

Please include in the above referenced proceeding a copy of this filing. Should you have any questions relating to this filing please contact me at (202) 776-5454.

Sincerely,

Michael J. Knapp

Attachment

cc: Yog Varma
     Diane Griffin Harmon
     Jennifer Gorny
     Les Selzer
     Marty Schwimmer
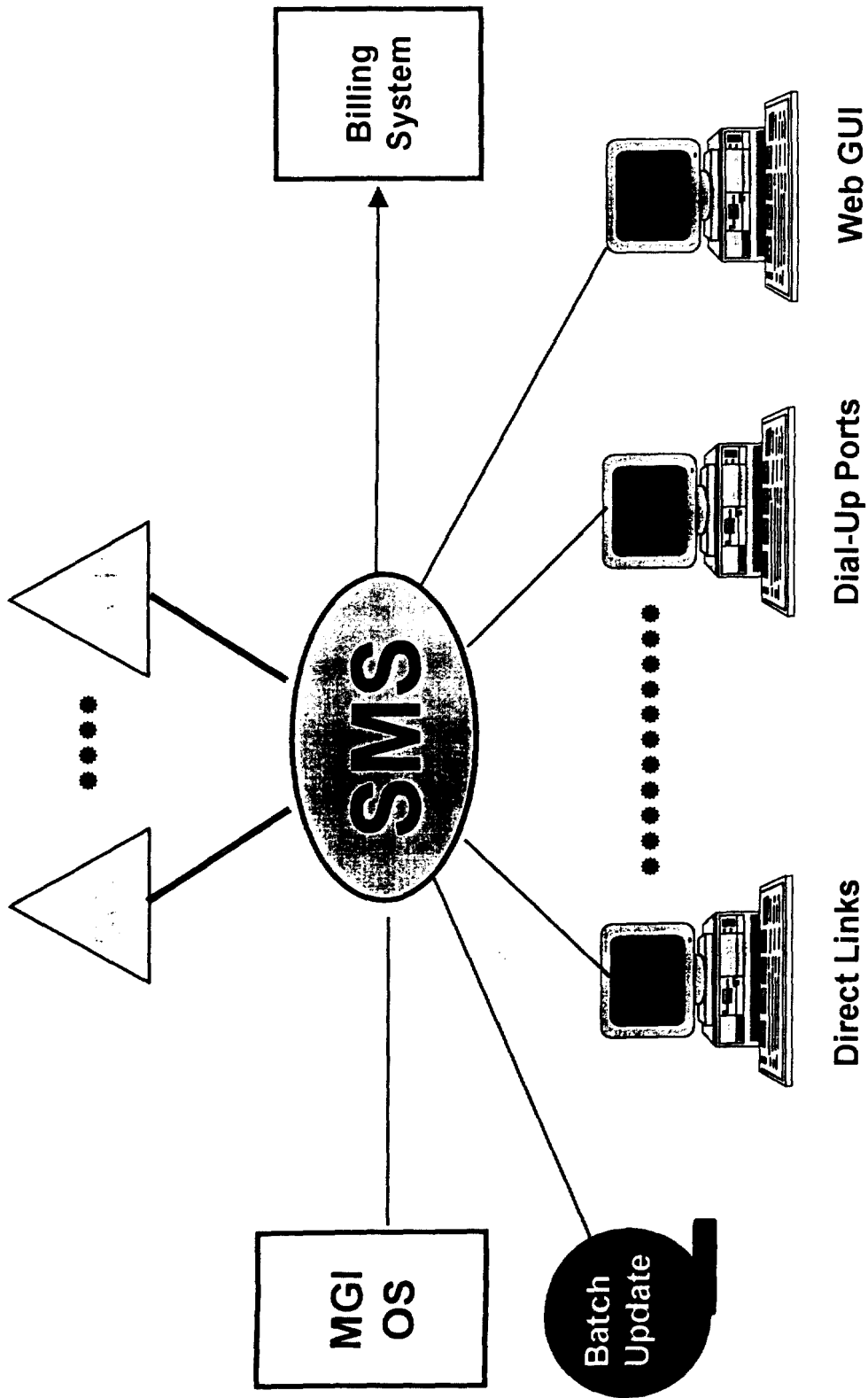
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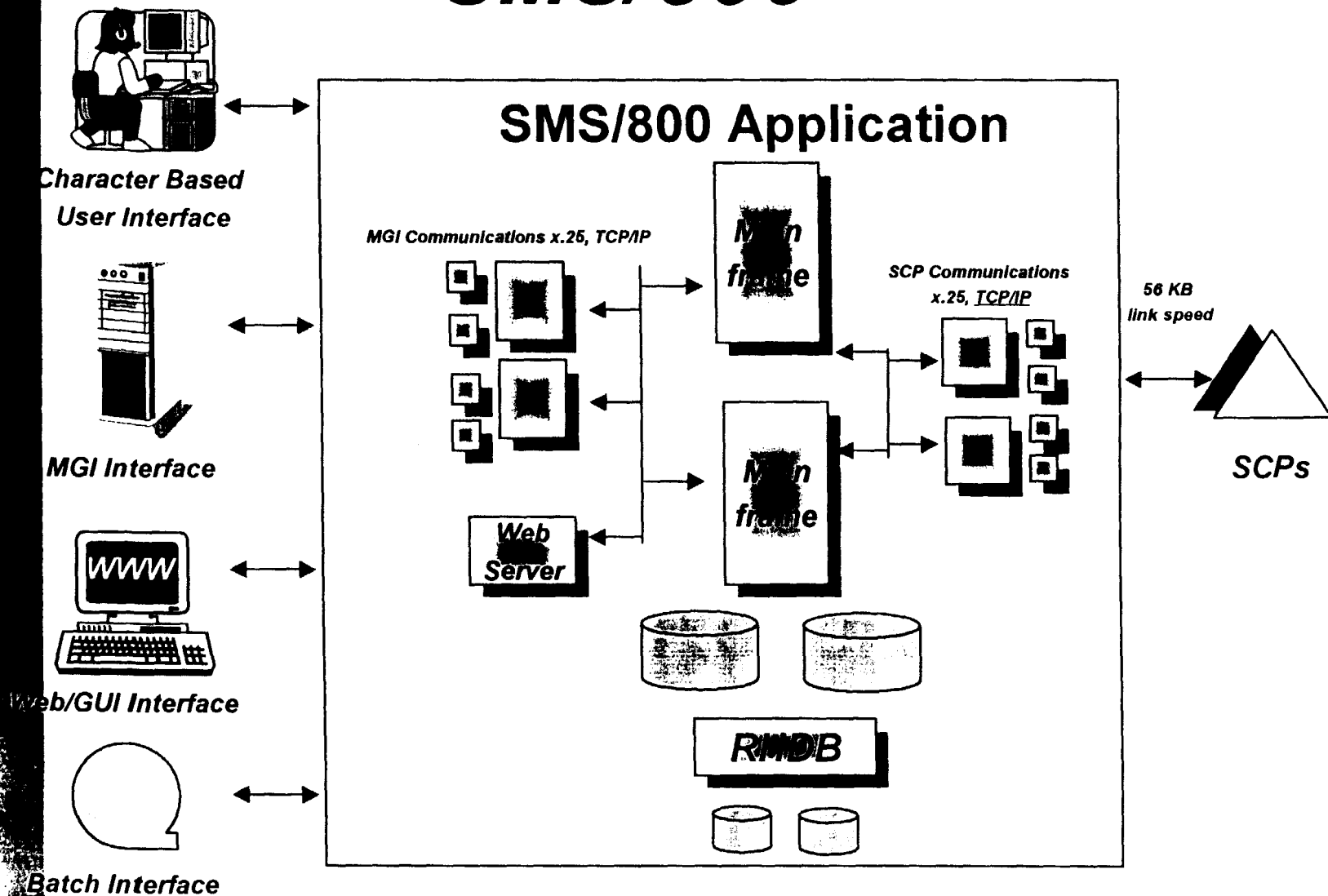List A B C D E

SMS/800

Code Opening

Topics

- System and Number Reservation Overview

- Code Opening Preparation

- Number Reservation Functionality and Enhancements

- 866 Code Opening Activities/Results

SMS/800

SMS/800 Overview

- Billing System
- Web GUI
- Dial-Up Ports
- Direct Links
- SMS
- MGI OS
- Batch Update

SMS/800

SMS/800 Application

Character Based
User Interface

MGI Interface

Web/GUI Interface

Batch Interface

MGI Communications x.25, TCP/IP

Main frame

Web Server

RMDB

SCP Communications x.25, TCP/IP

56 KB link speed

SCPs

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Number Reservation

- Support multiple search methodologies:
  - Specific number searches
  - Random searches
  - Vanity number searches
  - Alphanumeric searches
  - Wildcard searches
- Support administrative agreements:
  - Reservation intervals
  - Reservation caps
  - Allocation capabilities

Code Opening
Preparation

Code Opening Preparation

- Analyze/plan system resources for code opening

- Resize message queues for increased volume

- Perform testing including industry testing

- Download *Master Number List* to the SCPs for the new codes

- Open the NXX codes for the code (excluding closed NXXs e.g. 911)

- Reset reservation timers due to increased load.

- Open New code in SMS/800

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Number Reservation Functionality and Enhancements

Search/Reservation Processing

(Prior to November, 2000)

- **On-Line User**
  - 2 step process. Must first search and then submit reservation request.
  - Can only request a search on 1 specific number at a time.
  - Terminal is locked after each search or reservation request until response is received.
  - Manually enters each search or reservation request.

- **MGI User**
  - Search & reserved in a single request.
  - Can specify search & reserve for 10 numbers in one request.
  - Can submit multiple requests without waiting for response.
  - Can program requests ahead of time.

- **GUI User**
  - Search & reserved in a single request.
  - Can specify search & reserve for 10 numbers in one request.
  - Window is locked after each search or reservation request until response is received.
 - Manually enters search/reservation information.

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Search/Reservation Processing

(Prior to November, 2000)

- Separate Entry Transactions for MGI, Character based interface and GUI.

- Parallel Processing for each Entry Transaction.

- Parallel processing optimizes scheduling.

- First in/First out at reservation queue.
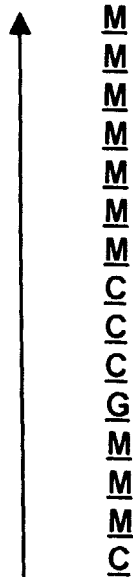
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Old Search & Reservation System Processing
(Prior to November, 2000)
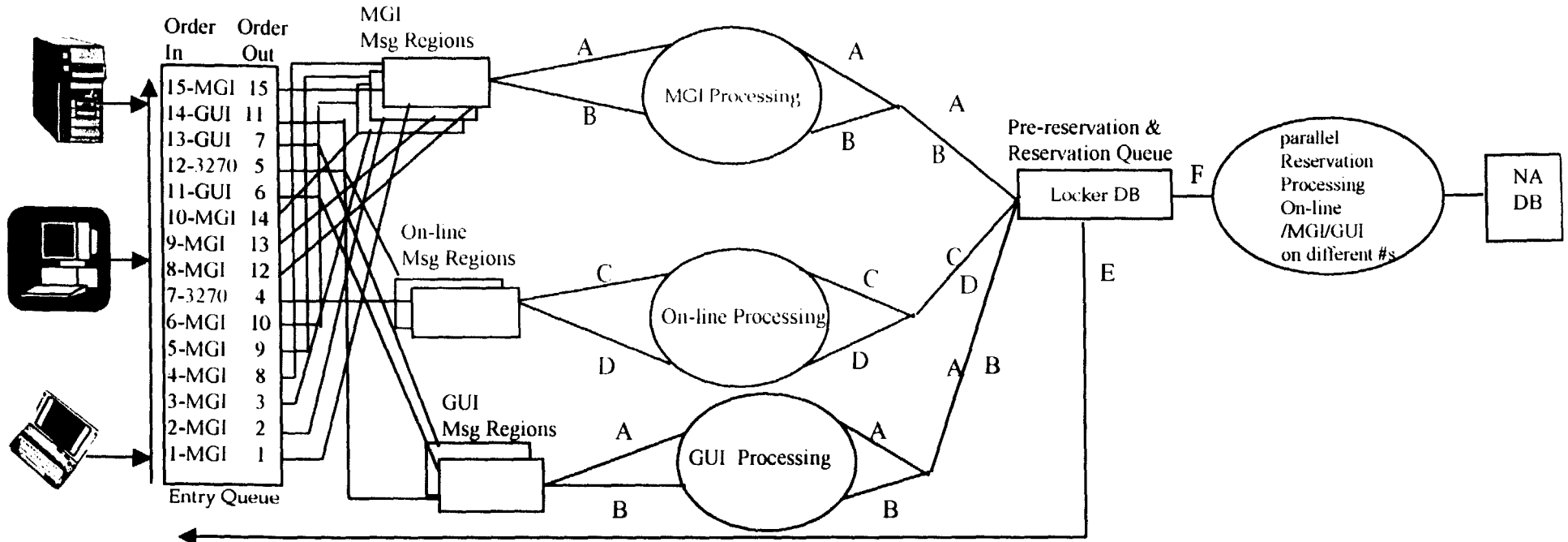
- **Every transaction into Entry Queue is time stamped when it hits the system**
- **Transactions leave the Entry queue in first-in-first-out manner based on the time stamp and transaction type**
- **There is parallel processing between the MGI, On-line, & GUI regions and within the regions**
- **On reservation request On-line & GUI users in response mode until reservation transaction completes**
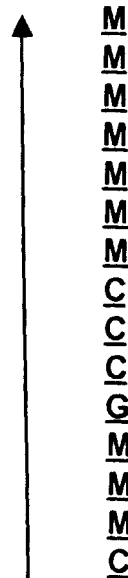
Queuing Options

Single Transaction
No Parallel Processing

Single Transaction
Parallel Processing
(current as of Nov 2000)

Multiple Transactions
Parallel Processing
(prior to Nov 2000)

M
M
M
M
M
M
C
C
C
G
M
M
C

M
M
M
M
M
C
C
C
G
M
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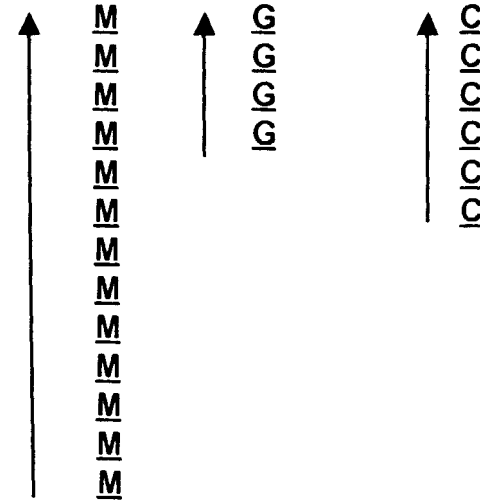
M=MGI Reservation Request   C=Character Based On-line Reservation Request   G=GUI Reservation Request

Search/Reservation Processing

(as of November, 2000)

- Single Entry Transaction

- Parallel Processing

- Parallel processing optimizes scheduling.

- First in/First out at Entry queue.
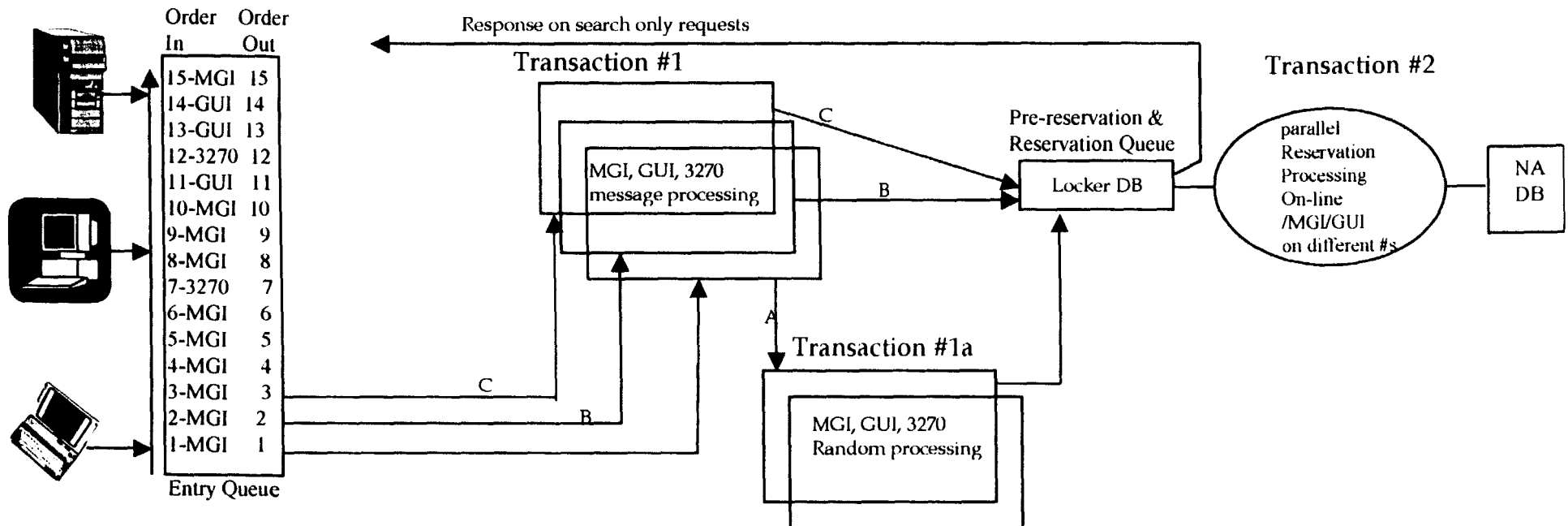
Current Search and Reservation
(as of November, 2000)

Order   Order
In   Out

Order In	Order Out
15-MGI	15
14-GUI	14
13-GUI	13
12-3270	12
11-GUI	11
10-MGI	10
9-MGI	9
8-MGI	8
7-3270	7
6-MGI	6
5-MGI	5
4-MGI	4
3-MGI	3
2-MGI	2
1-MGI	1

Entry Queue

Response on search only requests

Transaction #1

Transaction #2

MGI, GUI, 3270
message processing

Pre-reservation &
Reservation Queue

Locker DB

parallel
Reservation
Processing
On-line
/MGI/GUI
on different #s

NA
DB

Transaction #1a

MGI, GUI, 3270
Random processing

A   B   C

- Every transaction into Entry Queue is time stamped when it hits the system
- Transactions leave the Entry queue in first-in-first-out manner
- There is parallel processing
- Specific searchers are protected immediately if spare
- Random searches don't slow down specific searches/reservations

A - Random search or random search/reservation
B - Specific # search or reservation
C - Specific # search/reservation

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Additional Functional Changes

- Allow 3270 to do a Search/Reserve in one request
  for 1 to 10 specific or random numbers.

- Move query and change for 3270/GUI to a different transaction which uses a separate region for processing.

- Unlock 3270/GUI terminal once reservation is in progress and numbers are protected.

- Move random (wildcard) searches to separate message region.

(Changes reduce the total number of transaction volume in the single message processing region used for search/reserve only.)

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Search/Reservation Processing

(as of November, 2000)

- **On-Line User**
    - Search & reserved in a single request.
    - Can specify search & reserve for 10 numbers in one request
    - Terminal unlocked once reservation is in progress and numbers are protected.
    - Manually enters each search or reservation request.

- **MGI User**
    - Search & reserved in a single request.
    - Can specify search & reserve for 10 numbers in one request.
    - Can submit multiple requests without waiting for response.
    - Can program requests ahead of time.

- **GUI User**
    - Search & reserved in a single request.
    - Can specify search & reserve for 10 numbers in one request.
    - Window unlocked once reservation is in progress and numbers are protected.
    - Manually enters search/reservation information.

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866 Code Opening Observations

- 866 code opened as planned at 12:01 CDT on 7/29/00

- Software performed as anticipated

- High reservation activity lasted approx. 1 hour

- Some online character based users experienced problems sending reservation requests the first 30 minutes - attributed to hardware issue.

866 Code Opening Results

- Total Numbers Reserved (Day 1):   137,802
  - MGI   73,451
  - Non-MGI   64,351

- First 3 Hours:

	MGI	Non-MGI	Total
– Hour 1:	65,936	15,195	81,131
– Hour 2:	6,526	30,404	36,930
– Hour 3:	280	3,335	3,615

- Normal Number Reservation Average Daily Volume (non-code opening): 23,000

Industry Stress Test - Post 866

- Test conducted - September 6, 2000
- Test configuration:
  - 25 On-line users participated
  - 100 GUI users were simulated
  - 65,000 MGI messages transmitted via simulator
- Replicated 866 slow-down experienced by on-line users.
- Analysis confirmed Hardware MSC link congestion.

Industry Stress Test - New Number Reservation Software - (Pre-855 Opening)

- Test conducted - October 12, 2000

- Newly enhanced software with new queuing model used

- Test configuration:
  - 10 On-line users participated
  - Additional 10 on-line users from vendor groups participated using scripts
  - 20 GUI users were simulated
  - 65,000 MGI messages transmitted via simulator

- Total 100,000 numbers reserved in 1 hour (representative of actual code opening based on 866 code opening data)

- No lockout or slow-downs experienced by anyone.

Code Opening Communications

SMS-00-24	03-02-00	866 and 855 Code openings 4-1-00
SMS-00-79	06-13-00	866 and 855 Code openings – Opening dates of 7-29-00 and 11-18-00
SMS-00-105	07-10-00	866 code opening 7-29-00, review of SMS/800 recommendations
SMS-00-114	07-21-00	866 code opening 7-29-00, review of SMS/800 recommendations as established in SMS-00-105
SMS-00-199	09-15-00	855 Industry Stress Test and Release 11.2.x Testing Dates (invitation to all ROs)
SMS-00-208	09-28-00	Conference call bridge & reminder for industry stress tests
SMS-00-215	10-04-00	11.2.x Training Information (First In/First Out Release)
SMS-00-259	11-08-00	866 code opening 11-18-00, review of SMS/800 recommendations
SMS-00-267	11-15-00	Reminder about 855 code opening on 11-18-00
NEWS-00-13	11-17-00	Delay of 855 code opening
NEWS-00-14	11-17-00	FCC letter delaying 855 code opening